The Intel® 860 Chipset

With Intel® Scalable Bandwidth Technology

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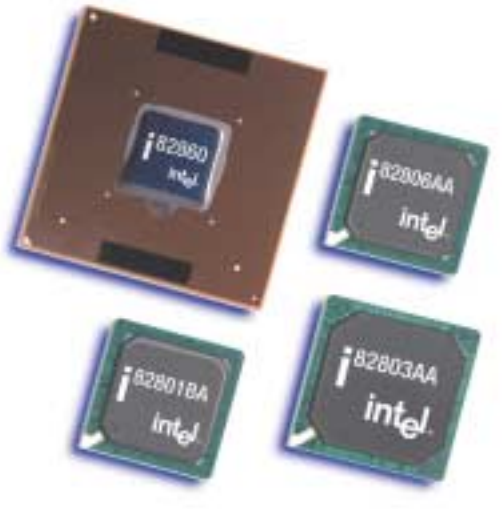
Platform Overview

As the next step in the evolution of Intel® Hub Architecture, the Intel® 860 chipset was specifically designed to meet the needs of high performance multi-processor systems. The Intel® 860 chipset, together with the latest Intel® Xeon™ processors for DP workstations, provide new levels of performance, scalability, and end user productivity.

A Scalable Design with Big Benefits

The Intel® 860 chipset utilizes the new modular design of the 800 family of chipsets. Like other 800 series chipsets, the Intel® 860 chipset has two core components:

- The 82860 Memory Controller Hub (MCH) is the main interface to the processor host bus, the memory and graphics interface. The Intel® 860 chipset delivers compelling performance with its dual high performance RDRAM memory channels, a 400 MHz system bus, and multiple I/O configuration options, including the ability to add up to two high performance 64-bit 66 MHz PCI segments. In addition, it provides the latest graphics support through 1.5V AGP4X technology. Together, these features deliver the highest total bandwidth capabilities to the workstation platform.
- The enhanced 82801BA I/O Controller Hub (ICH2) delivers twice the I/O bandwidth over traditional bridge architecture and provides dedicated data paths to fully optimize the additional bandwidth. The ICH2 makes a direct connect from the graphics and memory for faster access to peripherals and provides the features and bandwidth required for the workstation environment. The ICH2 supports 32-bit PCI, and has been enhanced to include support for Ultra ATA/100, integrated LAN controller, and dual USB controllers. Dual USB controllers can be used to configure four full bandwidth USB ports. Other enhancements include support for six channels of digital audio for digital surround sound support, AC'97 support, and SM bus enhancements.



CORE COMPONENTS COMPONENTS FOR SCALABILITY

In addition to providing high performance, the Intel® 860 chipset was designed for scalability. Two optional components may be used with the core components:

- The 82806AA 64-bit PCI Controller Hub (P64H) supports 64-bit PCI slots at speeds of either 33 MHz or 66 MHz. The P64H takes advantage of the Intel® Hub Architecture, connecting directly to the MCH and providing a dedicated path for high performance I/O.
- For systems needing greater memory capacity, an 82803AA RDRAM-based memory repeater hub (MRH-R) may be utilized. The MRH-R converts each memory channel into two memory channels, doubling memory capacity.

Features Maximize Performance

- Dual RDRAM memory channels, operating in lock-step, provide up to 3.2 GB/s of memory bandwidth.
- The Direct AGP port provides up to 1 GB/s of graphics bandwidth.
- The Intel® 860 chipset supports up to two processors using a 400 MHz system bus.
- A prefetch cache, integrated into the Intel® 860 chipset, allows highly efficient data flow and helps maximize system concurrency.

Features	Benefits
■ Validated with Intel® Xeon™ processors	■ Brings next generation processor technology to the workstation market segments
■ 400 MHz system bus capability	■ Delivers a balanced system matching the system bus BW of 3.2 GB/s with the Memory bus of 3.2 GB/s
■ Intel® Hub Architecture with optional P64H	■ Dual 64-bit 66 MHz I/O segments for fast drive access and high speed networks
■ AGP4X	■ 1 GB/s of graphics bandwidth allows highest graphics performance on IA platforms
■ MRH-R (RDRAM based repeater hub)	■ Extends RDRAM memory capacities and increases system scalability
■ Dual RDRAM channels	■ Maximum memory performance (3.2 GB/s)
■ Prefetch Cache	■ Maximizes system concurrency so that simultaneous processes do not impact system performance
■ Dual USB controllers	■ Enhanced Plug and Play with four full BW USB ports

Product	Package
82860 Memory Controller Hub (MCH)	1024 Organic Land Grid Array (OLGA)
82801BA Integrated Controller Hub (ICH2)	360 Enhanced Ball Grid Array (EBGA)
82803AA Memory Repeater Hub - RDRAM (MRH-R)	324 Ball Grid Array (BGA)
82806AA 64-bit PCI Controller (P64H)	241 Ball Grid Array (BGA)

Intel Access

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UNITED STATES and CANADA
Intel Corporation
Robert Noyce Bldg.
2200 Mission College Blvd.
P.O. Box 58119
Santa Clara, CA 95052-8119
USA

EUROPE
Intel Corporation (UK) Ltd.
Pipers Way
Swindon
Wiltshire SN3 1RJ
UK

ASIA-PACIFIC
Intel Semiconductor Ltd.
32/F Two Pacific Place
88 Queensway, Central
Hong Kong, SAR

JAPAN
Intel Kabushiki Kaisha
P.O. Box 115 Tsukuba-gakuen
5-6 Tokodai, Tsukuba-shi
Ibaraki-ken 305
Japan

SOUTH AMERICA
Intel Semicondutores do Brazil
Rue Florida, 1703-2 and CJ22
CEP 04565-001 Sao Paulo-SP
Brazil

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